


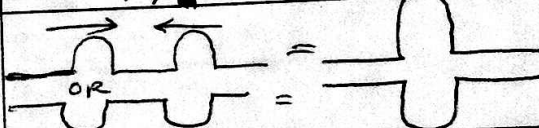
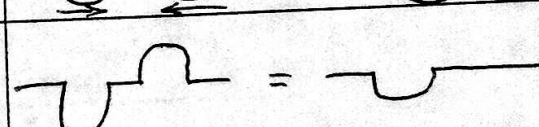


Name \_\_\_\_\_

Period \_\_\_\_\_

# Behavior of Waves

1. Write the main idea of each topic.

Wave Interactions		
Topic	Main Idea	Draw a picture of each topic
Reflection	A WAVE STRIKES A SURFACE AND BOUNCES BACK AT THE SAME ANGLE IT HIT	
Refraction	A WAVE SPEEDS UP OR SLOWS DOWN WHEN IT ENTERS A NEW MEDIUM	
Diffraction	A WAVE BENDS AROUND AN OBSTACLE	
Constructive Interference	A CREST + CREST OF TWO WAVES OR A TROUGH + TROUGH OF 2 WAVES MEET TO GET A LARGER AMPLITUDE	
Destructive Interference	A CREST + TROUGH OF TWO WAVES MEET TO GET A SMALLER AMPLITUDE	

## Reflection

2. Is the following sentence true or false? (circle one - If it is false change it to make it true).  
 Reflection occurs when a wave bounces off a surface that it cannot pass through.

**Refraction** PART OF THE WAVE COULD REFLECT WHILE PART OF THE WAVE IS REFRACTED

3. Why does refraction occur when a wave enters a new medium at an angle?  
 THE WAVE SLOWS DOWN OR SPEEDS UP CAUSING IT TO BEND

4. Is the following sentence true or false? (circle one - If it is false change it to make it true).  
 Refraction always involves a change in the speed and direction of a wave.

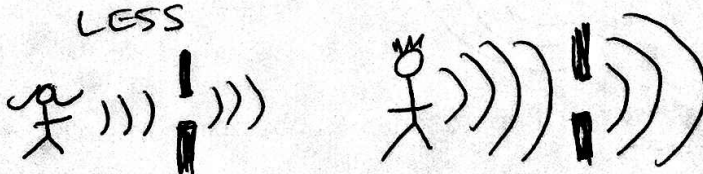
## Diffraction

5. What is required in order for diffraction to occur? A SMALL OPENING, AN OBSTACLE OR BARRIER

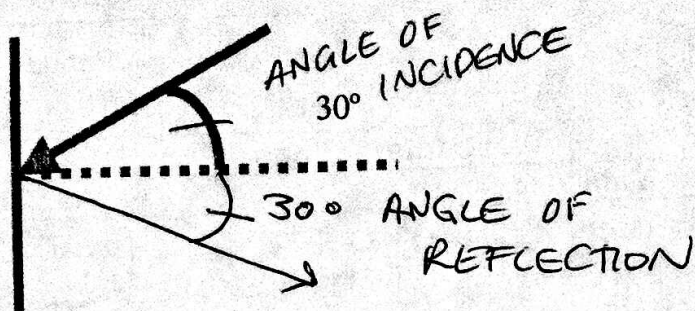
6. What determines how much a wave diffracts when it encounters an opening or an obstacle?  
 THE WAVELENGTH AND THE SIZE OF THE OPENING OR OBSTACLE

7. Is the following sentence true or false? (circle one - If it is false change it to make it true).  
 A wave diffracts more if its wavelength is small compared to the size of an opening or obstacle.

LESS



## REFLECTION:



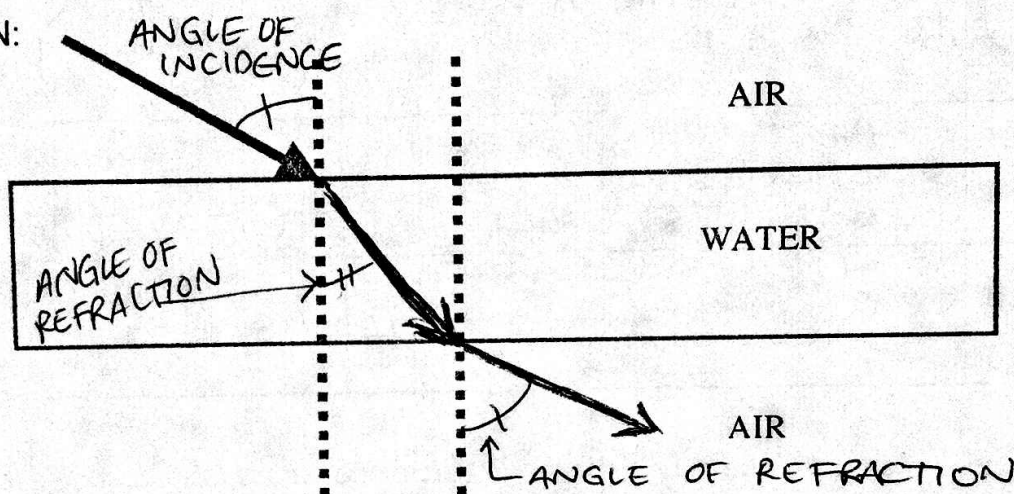
Above is a diagram showing an incident ray going towards a mirror. When it hits the mirror it will be reflected.

8. Draw the ray of reflection

9. Label the angle of incidence and the angle of reflection

10. Determine the measure of the angle of reflection  $30^\circ$

## REFRACTION:



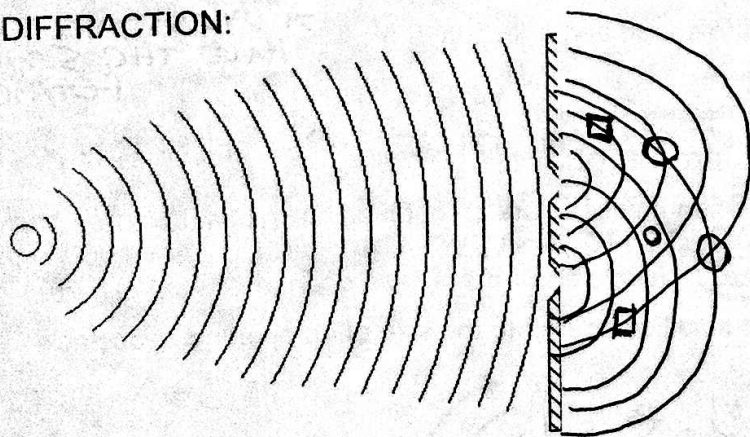
Above is a diagram showing an incident ray going from air into water. The ray will slow down and bend.

11. Draw the refracted ray as the ray slows down upon entering the more dense water.

12. Draw the refracted ray as the ray speeds up upon reentering the less dense air.

13. Draw and label the angle of incidence and the angles of refraction.

## DIFFRACTION:



Above is a diagram showing a wave as it approaches an obstacle containing two slits, the wave will bend and pass through the slits.

14. Draw the resulting wave(s) on the opposite side of the obstacle

15. CIRCLE one position where constructive interference is occurring between the new waves.

16. SQUARE one position where destructive interference is occurring between the new waves.